

Appl. No. 10/810,023  
Amdt. Dated November 7, 2006  
Reply to Office Action of October 6, 2006

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**REMARKS**

Applicants have canceled claim 21 without prejudice.

**Claim Rejection Under 35 U.S.C. 112**

Responsive to the rejection of claim 21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, Applicants have canceled claim 21, without prejudice, and the rejection relating thereto is moot now.

**Claim Rejection Under 35 U.S.C. 102**

Claims 1-3, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al. (U.S. 5,534,743). Applicants respectfully traverse this rejection.

Claim 1 recites in part:

... a shadow mask including a plurality of openings defined therethrough according to a predetermined pattern, the predetermined pattern being in accordance with a pixel pattern of a flat panel display, the shadow mask having an upper surface and a lower surface; and

an insulative layer including a first portion formed on the upper surface of the shadow mask, a plurality of second portions, and a third portion formed on the lower surface of the shadow mask

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**and the second portions disposed in the respective openings and connecting the first portion with the third portion. (Emphasis added.)**

The Examiner stated in the Final Office Action that Jones et al. disclose a shadow mask (see Fig. 8, item 66) and an insulative layer including a first portion layer (see Fig. 8, item 68), a **plurality of second portions (see Fig. 8, item 70)**, and a third portion (see Fig. 8, item 64). However, Jones et al. disclose that "an augmented gate structure of such type is shown in Fig. 8, wherein the field emitter array structure comprises...dielectric layers 64 and 68 sandwiched with **gate metal electrode layer 66, and gate electrode augmentation (gate diameter-decreasing) extension layer 70** extending radially inwardly into the well 72 ..." (Emphasis added.) (See Fig. 8; Columns 9 and 10). Thus, the gate electrode augmentation extension layer 70 **inherently must be made of a conductive material**, thereby distinguishing from the second portions of the insulative layer of claim 1. That is, if that extension layer 70 were indeed made of an insulating material, as argued by the Examiner, it would be **unable to function as a gate electrode augmentation** (i.e., as an extension of the gate metal electrode layer 66). Therefore, Applicants submit that Jones et al. fail to disclose or suggest an insulative layer including a plurality of second portions received in respective openings of the shadow mask and connecting the first portion with the third portion, as required by claim 1.

Therefore, claim 1 is not disclosed, taught, or suggested by Jones et al. or any of the other cited references, taken alone or in combination.

Furthermore, the shadow mask and the second portions of the insulative

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layer of the presently claimed device produce new and unexpected results. A shadow mask used in the device of claim 1 can be made by a known technology in the flat panel display field with a high precision, and the claimed barrier array is convenient and inexpensive to make. In addition, the barrier array of the claim 1 is disposed between a gate electrode layer and a cathode electrode including a substrate and a plurality of field emitter elements formed on the substrate. The second portions of the insulative layer are disposed in the respective openings of the shadow mask and connect the first portion with the third portion to insulate the shadow mask and the respective field emitter elements received in the respective openings, thereby aiding uniformity of electron emission from the respective field emitter elements. Therefore, claim 1 is patentable over Jones et al. under U.S.C. 102 and 103.

Accordingly, claim 1 is in condition for allowance, the allowance of which is hereby respectfully requested.

Claims 2 and 3 each are directly dependent from claim 1, and, as such, Applicants submit that claims 2 and 3 should also be allowable.

Claim 18 recites in part:

... an insulative layer including a first portion formed on the upper surface of the metal plate and a plurality of second portions, the second portions extending from the first portion into the respective openings and formed on inner edges of the metal plate that bound the respective openings. (Emphasis added.)

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As set forth above in the discussion with respect to claim 1, the gate electrode augmentation extension layer 70 disclosed by Jones et al. must be inherently made of metal, thereby distinguishing from the second portions of the insulative layer of claim 18. Thus, Applicants submit that Jones et al. fail to disclose or suggest an insulative layer including a plurality of second portions extending from the first portion into the respective openings and formed on inner edges of the metal plate that bound the respective openings, as required by claim 18.

Therefore, claim 18 is not taught or suggested by Jones et al. or any of the other cited references, taken alone or in combination.

Furthermore, the second portions of the insulative layer of the present invention, as provided in claim 18, produce new and unexpected results, as set forth above with respect to claim 1. Therefore, claim 18 is patentable over Jones et al. under U.S.C. 102 and 103.

Accordingly, claim 18 is in condition for allowance, the allowance of which is hereby respectfully requested.

Claim 20 is directly dependent from claim 18, and, as such, Applicants submit that claim 20 should also be allowable.

**Claim Rejection Under 35 U.S.C. 103**

Claims 4, 5 and 22 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Jones et al. (U.S. 5,534,743).

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Claims 4 and 5 are each directly dependent from claim 1. As detailed above, claim 1 is submitted to be patentable over Jones et al. under 102 and 103. Therefore, claims 4 and 5 should also be allowable, since each of them includes the patentably distinguishing features of claim 1. Claim 22 is directly dependent from claim 18. As detailed above, claim 22 is submitted to be patentable over Jones et al. under 102 and 103. Therefore, claim 22 should also be allowable, since it includes the patentably distinguishing features of claim 18.

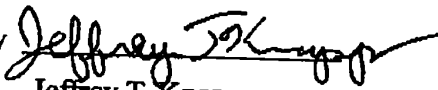
Applicant respectfully notes that any new grounds of rejection in a next Office Action could not be considered as having been necessitated by amendment or by an Information Disclosure Statement. Accordingly, if the next Office Action includes such a rejection, it would not be proper for that Action to be made Final, as per the guidelines set forth in MPEP 706.07(a).

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In view of the foregoing, the present application as defined in the pending claims is considered to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,

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